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AGRICULTURAL HISTORY is designed as a medium for the publication of research and documents pertaining to the history of agriculture in all its phases and as a clearing house for information of interest and value to workers in the field. Materials on the history of agriculture in all countries are included, and also materials on institutions, organizations, and sciences which have been factors in agricultural development.

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AGRICULTURAL HISTORY

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THE AGRICULTURAL SURPLUS: A PROBLEM IN HISTORY¹

FREDERIC L. PAXSON

The world rides uneasily in the trough of a great panic. It has been riding there for nearly thirty months, and no one needs to be reminded of the fact. Its subsidence into the trough was visible and noisy, for it involved a descent from a pinnacle of exaltation and a hysterical prosperity. There are none, but the astrologers, who can tell whether or not the bottom has yet been reached. But it is obvious, as obvious as the trough itself, that the bottom must be reached before a new ascent can be begun. Yet we are already plotting the curve of a fresh period of prosperity; and there is substantial agreement among those who advise the world that when the new crest comes into sight there will be a vista of a changed world order. It is conceded that one period of our history has been finished. Another is to begin. But there is no agreement as to how the new era is to look.

Never, after a panic, has the air been so heavily impregnated with advice and prognostication as it is in 1932. There have been panics enough within the American recollection, and after each panic there has been recovery. On the basis of experience, presumably there will be recovery after the depression now prevailing. But the last boom period, which reached its crest in the bull market of 1929, was served with statistical forecasts and economic interpretation suggesting that it was to last forever.

¹ This article was presented in substance as the address on behalf of the Agricultural History Society at its joint dinner with the Mississippi Valley Historical Association in Minneapolis on December 28, 1931.

The ballyhoo artists who provided the accompaniment for the great splurge are somewhat out of favor.

The extent of the depression has weakened the willingness of the public to accept as sound the prophets whom they followed into it. There are only minor prophets on the air, yet the United States is yearning for the sound of the authoritative voice of a major prophet.

Every editor is straining his voice to sound like one of these prophets; and every senator, and every college president. It seems as though every reformer who has had a fixed idea in the past is trying to profiteer upon the low-mindedness of the present. Old schemes are being dressed up in new terminology to re-vitalize the world. We hear much of social justice and economic equilibrium, as we have heard of them in other periods of introspection. They are characteristic symptoms that accompany the depression moments in the business cycle. The measures for immediate relief, and the sailing directions into a new Utopia where panics shall recur no more, are as numerous as the advisers, and as contradictory as the philosophies of Rome and Moscow. They have few common qualities; yet the commonest generally escapes critical examination by either the diagnostician or the patient, and it needs it most. The majority of the programs seem to be based upon the assumption that there is no natural limit to the level of welfare that may be reached by society; that the present uneven distribution of opportunity and wealth is due to the cupidity of ruling classes; that an existing economic order has broken down; and that by prevision the world may hope to create an economic millenium.

If one had time to scrutinize each of the heads of this comfortable and inclusive assumption, he might conceivably reach the conclusion that, as to cupidity, there is no difference between the greed of the ruling classes and that of the ruled, except in its success; that no existing economic order has broken down, because none has since the beginning of the industrial revolution had time genuinely to exist; and that so far as prevision is concerned, the world has never known a class with sufficient sustained disinterest or wisdom to be safely entrusted with the responsibilities

of prevision. He might be left to ponder upon the initial premise that man "by taking thought can add one cubit to his stature;"—that the level of social welfare can be raised at will.

The hope for the world that is inherent in this assumption of a controllable future is attractive enough to command votes in a popularity contest, but the historian is bound to admit that the conviction as to its reality has little solid foundation in historical evidence. It has, at least, never happened yet. The demonstration of its likeliness is far from complete. The historical mind ought to require that such demonstration fit into the experience of mankind, and that no hope of a rising curve of betterment, without predictable crest, be advertised until after a more searching examination than this one has received. The trend of the result of such examination may be suggested by a critique of a single section of the broad assumption. The farmer is a part of our social picture; he has always been a part, and he always will be until synthetic foods made in the laboratory eliminate the dependence of society upon the accidents of crop yield. An understanding of his share in any scheme of welfare will help to a clearer appreciation of the structural relations of all the shares. And more particularly, it is important to consider the strategic position of that part of his crop yield that is under wide examination today, and that is commonly described as the agricultural surplus.

In studying this agricultural surplus, one may as well begin at the beginning, with the fact that human life is based upon food; and that food is a condition precedent not only to mere existence, but to every status above the margin of subsistence that may be described as a civilization in distinction from the initial cultures prevailing at the vital moment when man first became man. The importance of this fact is so obvious that it ought not receive mention without apology. It would not be mentioned were it not that it is generally ignored in popular considerations of the social level.

Our forebears emerged into the light of history not much above this margin of subsistence. For most of them, and for most of their time, life was the pursuit of one meal after another. Leisure came rarely, and to few; and to multitudes who failed to find the

meal came lingering death. Only as the individual got a meal ahead, could he have leisure or the freedom that accompanies it. When the first civilizations, as distinct from the initial cultures, made their appearance, they were, without exception, the by-product of a surplus, generally agricultural; and the size and distribution of that surplus determined the elevation and spread of the civilization. We have today gone far beyond our forebears in the cultures that those who are on our social peaks enjoy, without nearly eliminating the fear of hunger from the world. Yet we have not repealed the social law that has prevailed from the beginning. Our civilization is determined by the stocks of food, above the immediate needs of those who raise them. Every luxury, every hour of leisure, every public service, and every debauch into war or other promiscuous destruction must take place within the limits of the rule that man must eat to live, and that his every activity beyond the production of food is dependent upon his stock ahead. Agricultural history is, by title, primarily concerned with the production of this food,—the stock for the immediate maintenance of the working farmer and that which constitutes the social capital. But in a larger way agricultural history embraces all history of human activity, for every activity must be carried on by men who eat three meals a day, or less, and who nibble away at the accumulated stores whether they work or not, and whether their work adds to the social capital or merely expends it. When the leader of embattled farmers tells them that they are at the foundation of civilization, he tells them the truth. Whatever affects agriculture in any of its aspects must spread its consequences throughout all our social structure.

No study of the agricultural surplus can proceed far before the fact is revealed that although the working farmers, a progressively decreasing percentage of the people, have produced it, they have rarely been able to enjoy it or to control the uses to which it has been put. The farmer has done the work and another has enjoyed the leisure. He has garnered the crop, and another has directed its consumption. He has rarely failed to get his subsistence share, for no supervision has ever been minute

enough to keep him from his immediate meal. But the strategy of society has somehow kept from him the control of the storehouse. History seems to reveal the working farmer on the margin of subsistence. He has starved in years of famine, but years of abundance have no more than filled his belly. He has alternated between periods of famine and flatulence, and has remained a working farmer. Legal history is crowded with the details of his status. Sometimes slave, often serf, villein, peon, or tenant, occasionally free producer with his freehold land, he has nevertheless handed over the larger share of the surplus, when there has been a surplus, to an upper class that has determined its use. In ancient times, when lack of transport forbade the shipment of the surplus, the lord rode in to eat it where it was raised. The royal progresses of the middle ages, and the changes of residence of the aristocracy from manor to manor indicate an ultimate consumer who was willing, if he must, to go to his dinner, rather than a producer who was allowed to profit where he had sowed the crop. The agricultural historian has as yet left unanswered the question whether this diversion of the surplus from its producing class to another group has been a consequence of the more penetrating greed of the dominant group, or the of helplessness of the farmer himself, or of some law of the social order that has decreed that the farmer shall continue to be a slave. Until this question is phrased and answered the creators of new social orders for a weary world must needs mark time; for no social order can hope to stand unless it be in general harmony with social law.

The marginal character of the historic farmer is obvious. And until popular education filled his mind and quickened his wits, his wish had little to do with the current of history. Once in a while, driven by hunger or by superstitious passion, he ran amuck, to be slain relentlessly by his fellows, led by the dominant rulers. The middle ages came to an end with the farmer still a shock absorber for the ruling classes. The reforms of the revolutionary period changed his legal status, but he still continued to absorb the shock. Theoretical democracy brought him the right to vote, and the state became in theory his servant, but he remained at the point of friction between existence and starvation. The

industrial revolution drew off members of his family to enlarge the share of the population living upon his agricultural surplus, but his condition persisted as though it were the result of an unalterable law.

Not until the European farmer broke ground across the Atlantic, and set up a frontier against the background of the North American continent, did a farming class emerge into historical consciousness, well above the level of subsistence, consuming more than was necessary to maintain it, and thinking of its members as citizens rather than as peasants. Our American experience with the farmer and his surplus is a novelty in world history; the historian may well ask whether it is also an accident. If, upon examination, it should prove to be the first step to a new social order for the food producers of the world, there would be a vast significance in United States history. If, on the contrary, the status was bred of conditions that occurring once can never be repeated on so grand a scale; if the American experience is only a momentary lapse from the operation of rules that determine the production and distribution of the surplus upon which civilization depends, then, again, there is a meaning in our history that needs to be grasped in its ultimate implications.

thus

The American farmer, whether we regard him as a new type of being or as a parenthetical accident, has for five generations differed sharply from the world farmer, and has given to the governments in the United States an appearance novel in historical experience. He has raised his food and has consumed it as he pleased. He has had no overlord to grind him down. Facing a fertile continent, even with the old tradition-worn habit of agriculture that he brought from Europe, he has seldom gone hungry. Famine has been a rare catastrophe, never wiping out a large fraction of the people. He has eaten enough, and has had more in the storehouse, uneaten. He has had at his own disposal the surplus, as well as his sustenance portion of the crop. And from the beginning of our American independent existence he, and his spokesmen in politics, have realized as profoundly as any member of a farmer bloc today that in the surplus lay the key to his social scale. There is no novelty in having an agricultural

surplus in the United States. We have always had it. And more than one hundred years ago Henry Clay understood it as completely as any of his successors in the United States Senate, and discussed it more plausibly and with greater sincerity than most of them. American politics has been largely the politics of the surplus, while American political parties have been generated near the agricultural frontier from the time of Daniel Shays until that of the McNary-Haugen bill.

And still we know less about the surplus—its production, its dimensions, its conservation, and its allocation—than is essential before we undertake a social reorganization based upon it. Visionaries have attacked its problem, beginning with their desire that everyone shall be well-fed. Financiers have worked at it, in search of safe investments bearing six per cent or better. Politicians have talked about it, seeking a formula to attract votes. Economists and political scientists have dealt with its immediate phases. But the agricultural historians have generally side-stepped a fair consideration of this greatest of all social riddles; yet they and they alone possess the various techniques that will come into use in its consideration. Only as the historian diagnoses its importance and uncovers its habits from the records of the past, is there a chance of constructing institutions that will at once live in the environment of our society and offer a more equitable future to our people than they have in the past enjoyed.

The studies around the margins of the problem of the surplus have been marred by ignorance and temper. It is our misfortune that the agricultural surplus is in the cleft between those who have made it and those who have lived upon it and pretended to write about it. The historic farmer has not only lived along the line of risk, but has often been an object of derision. His rusticity has made him the butt of laughter, and throughout all literature he has been made to provide more than his share of the common figures. His ignorance has entertained those who have fancied themselves to be his superiors, and has been made the basis of discrediting whatever he has tried to formulate into a social demand. And when he has resisted the diversion

of the surplus away from his enjoyment it has been easy to raise against him the forces of vested order, religion, and patriotism, as though he were made by nature to be a patient beast of burden to carry the rest of society on his back. The classes fed from his granary have done the writing, while the historians have found it easier to rationalize the structure than to analyze it. Ignorance of the limits of the problem, and of the ultimate resources of the surplus, has been at the top; passion at the bottom.

A good deal of the ignorance upon the part of the working farmer, that has consistently been assumed, has unfortunately been real. It has been a result of his traditional status that he has lived close to the soil and has seen little of the world. Formal education missed him almost entirely. Those of his family who have risen in the world and turned to other occupations might many of them have been natural leaders had they remained on the farm. When the American farmer has had his try at self-help his information has been less accurate than his feeling has been acute. He has had a sense of abuse. Seeing another class, vastly fewer in number than his own, apparently living upon his work, he has ascribed the situation to cupidity or to trickery, and has diabolized the oppressor. The image of his rivals, painted for him by those who have aspired to lead him, has been even less true than the picture of himself drawn by his social betters. He has attributed to malice not only what has been the share of malice, but also the burdensome composite of social and economic law that has worked against him. In good years his oppressors have appeared to be unwilling to pay him for his crop. In famine years they have sold back to him at starvation prices what he has himself produced. He still holds the social order responsible for his sufferings, as anyone may learn who reads the *Congressional Record*. And many of his most trusted leaders have nothing to offer him but the racy vocabulary with which they describe the sins of his oppressors. Between the ignorance of the upper classes, looking down, and the passion of the farmer, looking up, the truth has been hard to find.

Basic at the point of cleavage, and vital to the sound study of the surplus, is the fact that the food producer is a gambler.

He alone, among those who serve society, has no means of determining the relation between his effort and his output. He may prepare his fields, select his seed, and cultivate his crop with utmost diligence, but between the planting and the harvest nature may take away his yield. Only quacks have ever pretended to control his rainfall. Scientists have given names to the diseases that wreck his crops, without preventing much of the wreck. The historian who tries in cold blood to describe the situation as it is, must give full weight to this element of uncertainty. It may be that he will find here a controlling condition which determines the fate of the food producer.

The American farmer, a term which for most of our existence has been nearly synonymous with American citizen, has suffered from every limitation inherent in his class, but in such less degree that he stands out in sharp distinction from the usual run of food producers, past and present. His struggle to make the surplus has been aided by the prevalence of cheap and fertile land. His ability to control much of it has been a consequence of a flexible society and the lack of an entrenched gentry. His political effort has been a conscious attempt to retain control of his opportunity and to raise his social level. And this level has risen, and still is, far above that of the food producers of Western Europe, his nearest rivals; and vastly above that which is still prevalent among the so-called backward nations of the tropics and the Orient. It used to be believed that the vitalizing influence of democracy had much to do with this superior status; and there may be something to it. It has more recently been thought that the atmosphere of the American frontier worked a metabolism upon the European stocks from which we are sprung, to generate a new type of human whom we call American. But neither of these interpretations has been developed by conclusive demonstration into more than an attractive hypothesis.

The shifting picture of the American farmer, as he stepped up from the level of his origin, as he enjoyed new dignities upon his richer standard, and as he now faces the alternatives of holding the level or reverting to peasant status, needs to be worked out. Certain of the outlines of the picture seem to be fairly

definite, although the details when known may at any moment compel a rearrangement of its composition. The status of today, obscured by clouds of controversy, though it is, will have to provide the vestibule to any future. It may be checked and better understood when it is compared with the status two generations back, when the American people emerged from civil convulsion into the interval between war and panic, in the sixties of the last century. And the present status, as well as that of the reconstruction period, may be again checked by comparison with that of the eighteenth century farmers whom Washington drew together to a closer union, and held intact when Europe slipped into the convulsive wars of the French Revolution and Napoleon. Each of the three cross sections of our society that may be made as of 1800, 1865, and 1930, has evidence to offer to the student of the strategic position of the surplus and to the inquirer as to the future of the food producer.

The Washingtonian farmer lived in a decade when agriculture had acquired a solid foundation in the United States. The periods of initial scarcity were over. Except in the earliest years of frontier creation, hunger had been rare. The crops of the United States provided food for all; and where the soil was superior, or skill and industry better than the average, the farming population gave an aspect of comfort and dignity to the land. Where there was more than dignity to be seen, where the mansion of the great planter crowned the hilltop, the luxury was more likely to be the result of rising land values than of profits extracted from the soil. But one easily finds evidence of comfortable and adequate existence among farmers who worked their fields themselves. The agricultural surplus was considerable, and where it could be disposed of its profits fell into the hands of a group of citizens not yet far enough removed from the farm to have forgotten the farmer status. Along the seaboard the Atlantic towns provided local markets, ampler than could be fed from local garden plots. The farmers within hauling distance of town shared in whatever prosperity there was. The market was strengthened by the needs of countries overseas, where nature was less generous than in America, or where the local practice led to concentration

upon a single staple crop. The ship-building industry of the North had of course its share in serving this remoter market, and had an interest in the distribution of the portion of the surplus that went into it. The business made a profit for both carrier and grower.

Where the farming population lived too far from town for hauling to be practicable; where no navigable stream ran a convenient current from field to market, the farmer lived and worked in a region entirely agricultural, and in which consumer and producer had not yet been differentiated. Here the surplus piled upon the ground, and here the problem of its disposition arose to exasperate the producer and to embarrass the politician when he faced the demand that the surplus should be turned to use. Without a surplus there could be no richness in a civilization; but without a market a surplus, however great, could be only an exasperation.

The early spread of American settlement westward was so rapid that from year to year the face of the continent changed almost beyond recognition. The change was ever more rapid than it could have been if dependent upon capital locally accumulated, for nearly every pioneer farmer could tap the savings of a previous frontier. But it always went slower than it might have gone had there been more capital at hand, to assist in setting up new farms. Indigenous capital, in a community solidly agricultural, could be laid by only as the agricultural surplus could be got to market. But it was the general condition of farming regions that where there were settlers at all there were productive farms. Where there were farms there was, except in the unusual years of war or crop shortage, more than enough food of local production. And where there was a local food surplus there was no market. The western farmer of Washington's administrations had corn in abundance, but could eat only a small fraction of it. He could turn it into hogs and force it to provide its own transportation in the search for a consumer; and droves of swine are repeatedly mentioned in the narratives of early travellers. But when frontier swine arrived at tidewater, hardened and toughened by the jaunt, they came into competition with well-

fed local hogs who had lived a life of leisurely fattening on local farms.

Or the western farmer could turn his grain into alcohol. Too bulky to be carried far in native state, the corn crop had values that could be marketed in the form of whiskey after processes not too technical for the average farmer to understand and operate; and the crop thus concentrated could be carried longer distances before the costs of transport consumed its total worth. But, on the whole, no part of the United States suffered from too scanty a supply of whiskey. This market was endangered when the fiscal needs of the new republic called for a tax on stills. No one can study the history of the whiskey rebellion of 1794 without beholding the surplus militant as a problem in both economics and politics in the United States. But the problem was in its simplest form as yet. The farmer made his crop, and lived off it. He had a surplus to vend. Where he could find a buyer he might prosper, for the burdens of taxation and overhead were light. And his relations with his market were relatively immediate for middlemen were not as yet firmly organized, and there were few partners in the farmer's business to demand a share of the profits. The family notes, signed when the enterprise was launched, were of course an incumbrance. The shipping industry claimed and took its share, and the dealers in supplies, whose fleets of Conestoga wagons sailed out over the Lancaster turnpike from Philadelphia to the German counties and the Valley of Virginia, must be maintained and paid. Among them they shared the surplus; but the farmer partner, better off than farmers usually have been, stepped up the level of his living, and looked to political action as a means of pegging each new level as he attained it.

We have as yet no history of the accidents that kept this level of American life pegged high. In a negative way, the absence of an entrenched rival claimant left the farmer in control of his surplus. In a positive way, the ease of access to the sea and the intermittent hunger of Europe made it possible to serve unusual markets. Professor William E. Dodd has related how "the farmers of the young nation, proud of their country and happy to be called free farmers, sold their abundant crops to warring

Europe at fabulous prices." We cannot state with precision the degree to which American welfare was dependent upon the catastrophes of Europe, but through the nineteenth century and beyond it, a succession of wars, famines, and disorders lessened the normal capacity of much of the world to feed itself with local food. The American farmer, profiting by conditions not created by himself, received a favored status and came perhaps to regard himself as possessing of right that which had accrued through accident. But it was the agricultural surplus, the power to control it, and the opportunity to market it that provided the main prop to the new agrarian level.

Two generations after the death of Washington, the United States emerged intact from its struggle for unity to find its basic problem unchanged. Its standard of living continued to be enclosed within the limits of the surplus. The old frontier had gone the way of all frontiers, ripening through post-frontier into a condition of settled operation. Some of the old equalities had disappeared as social advantages had distributed themselves unevenly in the ripened regions. There were new frontiers, much like the old, still cutting away at the western margin of settlement; but whereas the Washingtonian frontier had been only approaching the Middle West, the Civil War frontier was climbing the gradual slope of the high plains and encroaching upon the Indian Country and the buffalo range. Professor Walter Prescott Webb has recently introduced the Colt revolver and the windmill as important coadjutors in the occupation of the Great Plains. Their work, supplementing that of railroad, cattleman, and farmer was not complete before the panic of 1873; but the railroad made a marked contribution to the American picture when it brought into the market the wheat crop of the Red River of the North. There was still a huge agricultural surplus, produced under the uncertain conditions of drought, disease, and insect pest; still varying from a crop almost too little to carry through to one whose overwhelming yield swamped the elevators and broke the price of food. It contained an element not present in the days of Washington, for cotton had been added, and technology had become a partner of the farmer.

The cotton gin, that made it possible to clean the fibre, and the sewing machine that made it cheap and practicable to work up the cotton cloth into clothing, created a new cash crop for the American farmer. There were unclad millions in the Orient, to be taught to put on shirts, and the clothing of the western world could be given cheap variety and freshness. The conditions of production of the cotton fibre were those that governed the other farmer crops, and for nearly a century after the invention of the cotton gin the cotton farmer increased production year after year in the attempt to satisfy a market that showed no sign of satiation. To a considerable extent the cotton farmer lived out of the agricultural surplus of the food farmer. His dependence on this side gave him alignment with other producers in exploitative or manufacturing fields. But the manner of his life was agricultural. The character of his operations, his entanglement in the uncertainties of crop production, and his isolation on the farm led him to add his voice to that of the food producer when things went wrong.

The surplus was as critical as it had ever been, but the hold of the farmer producer upon it was weakening. In the generation preceding the Civil War a revolution in method and in theory unsettled agricultural habits that were formed in the new stone age. The agricultural college brought science into business, to increase crop yield. Cyrus Hall McCormick and his kind began their work upon the farmer's tools. In the same fashion the power of the industrial worker had been multiplied through the use of machinery during the industrial revolution. The farmer, once he bought his reaper, had in substance taken a partner into his business without fully realizing the implications of the contract. In every field of industry a similar situation was being discovered. When railroad betterment after the panic of 1873 made it possible to increase train length and load, and the railroads sought to make one train crew do the work of two, there came destructive strikes. The unionized workmen fought to prevent the companies from appropriating the whole profit accruing from the use of better tools. In manufacturing industries, whenever a new machine lessened the labor cost there was con-

troversy over the question whether the workman should be paid according to his output, or according to his hours of labor. No economic problem was more acute than that of dividing the social profits of invention. The farmer, too, was more productive because of his machine. The skilled worker in the factory, making reapers, was inherently as much a farm producer as his brother who ran the machine across the fields. Without fully sensing the nature of the entanglement, the farmer, by making use of the machinery, took a new partner in a business full of hazards; with him he must agree to share the crop before he knew how large it would be. The difficulty in the distribution of the crop lay in the fact that the farmer produced against the background of uncertain crop yield. His share in the rewards was on the uncertain edge; whereas his industrial partner had been pledged fixed payments that must be met, crop or no crop. In the Granger movement one aspect of this entanglement came to the front. Freight rates were involved, and railroads, fixing their tariffs in good years, frankly adjusted them to yield "all the traffic would bear." This was hard enough in years when the yield was reasonable and prices were high; but when the price was low and yield was large, the rate became a powerful grievance to the farmer. The various industrial partners took their pay in fixed rates, fixed prices, and fixed interest. The farmer financed the transaction out of his uncertain yield.

In the ensuing competitions that took place upon the farmer's front in the later sixties, the farmer lost the immediacy to his market that had characterized his status in the eighteenth century. He was caught in the network of complex industrial organization, which the organizers themselves understood none too well, and which was entirely foreign to the experience of the farmer. His strategic position was endangered because it was chiefly he who had to take up the slack. The long-range historian may perhaps see at this point the beginnings of an accommodation by the farmer in the United States to the position of the world farmer, in having to carry fixed burdens upon his food surplus. One may suspect that the haleyon days of frontier splurge were nearly ended. It was still true that the American farmer was so

well off that millions of aspiring associates came from Europe to share with him the bounty of the land. But it is also true that the farmer, turning to politics as usual to peg his social level, sought from the state a type of aid new in American thought. Professor John D. Hicks has described with insight and humor this *Populist Revolt*. The beginnings of government interference in business took place with railroads and trusts first under fire, and with farmer parties naturally enough diabolizing corporations and the capitalists. It was the unwavering assumption of the farmer that his status in American life was unalterable. He fought the vested interests of wealth, but glorified his own vested interest in the social level. No one can understand Populism or free silver without first comprehending the vital concern of the food farmer in his surplus, and the unhappy economic jam into which he had come with variable and uncontrollable production out of which to meet fixed charges.

The difficulty of the farmer's situation was enhanced by the fact that his immediacy to government, like his immediacy to his market, had been interrupted. In the day of Washington, with people and farmers nearly synonymous, the latter when aggrieved could turn to themselves in their civic capacity for redress. No other class was completely organized, with full power to contest or to obstruct. But the farmer of the seventies and eighties of the last century had taken as his partner an industrial group more mobile and quite as vocal as himself. When the food farmer raised his voice for relief and justice, the dominant party listened instead to the voice of the industrial associate, and adopted the protective tariff as the policy of prosperity. And when in the next decade the embattled farmers were starved into frantic devotion to inflation finance as a social remedy, the industrial and financial sharers in the surplus had the controlling voice in denying the relief.

When next we look at a cross section of the problem of the surplus, in our own time, at the close of the World War, we are confronted with all the difficulties of too close a range. But if we take the farmer's word for it, the control of his food surplus is still the key to prosperity; and if we believe the diagnosticians

who are prescribing for a sick world, we must accept their agreement that along the surplus is the battle front. It still is true that the American farmer has no counterpart among world farmers, past or present. Driving his car over his improved road, with silk stockings on his womenfolk, for purchased entertainment at the nearby town, his social level continues high. Were there no quota law the stream of immigration would doubtless flow in higher flood than we have ever seen it. In the immediate present his surplus gluts his market; but within periods not yet forgotten he has profited as usual by the calamities of the foreign world. The analysis of his involvement and his prospects, for the purpose of comparison with farmer status in earlier times, suggests that the pressure of a rigid society is coming down upon him like the unyielding edge of another glacial period.

The essential element in the immediate situation is his position between the millstones of variable assets and fixed charges. The industrial partner taken into his business in our middle period was a burden, heavy enough, and every element of rigidity that he introduced to the farmer's disadvantage has been intensified. And there are now more claimants to a share of the sustenance portion of the farmer's crop, and more to absorb the surplus. When the farmer turned to government to redress his grievance he began to generate bureaucracy in America, and the bureaucrats have many mouths that must be filled.

The costs of government today are theme for denunciation by every class that pays a tax. Government is depicted as a devouring monster, keen on funds. It is little noticed that government has never done nearly as much as it has been asked to do, and that continuous public pressure through two generations has driven it not only into much regulation of business, but into the administration of many services for common advantage at the public cost. The Congress, in the current debates, has called attention to a blizzard of bulletins that has descended upon our people,—bulletins and all that bulletins imply:—how to kill cockroaches, and how to acquire sun-tan, how to mix concrete and how to stop the boll weevil and the corn borer. But all of these have resulted from a public demand that the members

of Congress have voiced, and all entail costs that must be met out of that surplus that the farmer makes. It continues to be as true as it was when the first neolithic man got one meal ahead and could enjoy his leisure, that every activity of society dissociated from the production of food must be sustained out of the surplus of food over and above the needs of the working farmer for maintenance. The costs, like those of the industrial partners in food production, and much like those of the various luxury services that make life comfortable, are fixed charges against a fluctuating resource. None can foretell the size of any crop, or the price at which it must be sold. Not even the Federal Farm Board knows much about the way in which attempting to peg a price affects the surplus. But Americans have continued cheerfully for a hundred years in the gamble with variability as they have piled up certain charges upon the uncertain continuance of the American advantage. "Today the farmer and the tenant seem clearly on the road to peasantry," says Professor Dodd. The time may come when the rigid demands that consume the surplus will leave to the working farmer who makes it as little freedom as he had in feudal France, and as unsafe an existence as the slave possessed upon the estates of ancient Rome.

The American farmer has assumed too completely that his scale of life is a necessary and eternal matter. Its contrast to the level upon which most farmers in historic times have lived needs an examination that it has not yet received, and whose results are problematic. Either the level is one that can be sustained, or it is an accident unlikely to be repeated. Any relief project, to stay solvent, must face the facts. It is improbable that any scheme that assumes the agricultural surplus to be capable of indefinite expansion can have a chance of success. And no program based upon the assumption that the American farmer type can be made to last forever can be anything but a misleading disappointment if the facts should establish it that the food producer, by the nature of his job, has always lived on the margin of subsistence and always must.

THE CATTLE TRADE FROM THE FAR NORTHWEST TO MONTANA

J. ORIN OLIPHANT

From the early days of the history of the Pacific Northwest through the boom period of the eighties cattle from the Columbia River Valley affected the economic life of Montana. Apart from the small herd which he had collected at Fort Owen for his own use, Major John Owen added to the wealth of western Montana by importing from the Columbia Basin in 1860 some three hundred head of stock cattle for the benefit of the Flathead Indians.¹ Furthermore, the mining communities of Montana in the early sixties were supplied in part by cattle raised in the Valley of the Columbia. Meanwhile the stock industry gained a foothold in southwestern Montana, and by 1865 the importation of cattle into this area had become an established business.² Some of these cattle—no one can say exactly how many—came from Oregon. But for the period before 1880 it is known that Montana herds were largely recruited either from Oregon stock or from eastern cattle of similar quality, for as late as 1880 “Texas characteristics in Montana stock” were scarcely observable.³

It was in the decade of the eighties, however, that the greatest movements of cattle took place from the Far Northwest to the ranges of Montana. During the boom years, when the cattle business was spreading into central and eastern Montana, the high prices offered for cattle for stocking purposes acted as a magnet to attract herds eastward from the Far Northwest. Montana was not, of course, the only area affected by the cattle

¹ Seymour Dunbar and Paul C. Phillips (editors), *The Journals and Letters of Major John Owen* (New York, 1927), 2: 218, 223, 264.

² Tenth Census, *Agriculture*, 3: 1021. See in *The Montana Post* (Virginia City, Mont.), of August 27, 1864, a brief note extolling Montana as a stock-raising country.

³ Tenth Census, *Agriculture*, 3: 1025.

boom, and by no means did all the western cattle drawn eastward by the lure of rising prices reach the ranges of Montana. Most of them, in fact, were driven through southern Idaho into Wyoming. But that this general eastward movement of cattle bred on far-western ranges affected in no small degree the developing cattle industry in Montana it is the purpose of this paper to demonstrate. Statistical information required for accurate measurement of this influence is not abundant; the effect can only be observed from data, drawn from varied sources, which establish the fact of a continuing movement of no inconsiderable magnitude.⁴

The boom period of the cattle industry on the Great Plains synchronized with the decline of the range-cattle industry in the Columbia Basin. Mining activity in the early sixties had enormously stimulated the live-stock business in the Pacific Northwest, and during the late sixties and the early seventies there had been a steady movement of cattle from western Oregon to stock the grass lands of eastern Oregon and eastern Washington. And in the course of time the industry spread into northern Idaho and to the Snake River Plains. Over-production brought on a depression which lasted from late in 1872 until the close of the decade of the seventies. The available markets in the Pacific Northwest and in California could not absorb the output of the northwestern ranges. Prices fell to levels that spelled ruin to many a stockman. Some cattlemen endeavored to sell out; a few resorted to the practice of spaying cows to check the increase. But by no such means could the situation be permanently relieved. As the evil days of depression continued, stockmen racked their brains for a solution of the problem. It was evident that new markets must be found, but where? By the middle seventies many a far-western cattleman was convinced that his surplus stock, if canned or otherwise preserved, could be disposed

⁴ The material in this and in the two immediately following paragraphs has been drawn from parts of chapters 3, 4, and 5 of the author's unpublished doctoral dissertation, *The Range-Cattle Industry in the Oregon Country to 1890*, a copy of which is deposited in the Widener Library, Harvard University. It seems unnecessary to burden these paragraphs with minute documentation.

of in overseas markets. This conviction led to experiments in beef-canning on the lower Columbia River, where the plants of salmon canneries could be utilized during the season when they normally would be idle. But such projects, although undertaken with enthusiasm, had demonstrated by 1877 their inadequacy to solve the problem of surplus cattle in the Columbia River Valley. The ultimate solution awaited the devastating winter of 1880-81 and the boom days of the cattle industry in lands east of the continental divide.

In the meantime other difficulties were beginning to confront the cattlemen in the Columbia Basin. The advance of sheepmen and of farmers into this region was rapid and alarming. Significant economic changes were impending. Although as late as 1880 there were still important grazing districts in eastern Washington, it was nevertheless observed in this year that the cattle industry was rapidly disappearing from northeastern Oregon. Even in areas north of the Columbia River the cattlemen were beginning to see the handwriting on the wall. On the fertile grass lands of the eastern part of Whitman County, farmers and stockmen were vigorously contending over the provisions of a herd law, and, although a popular vote in the "cattle counties" of Washington Territory in this year revealed a majority opinion adverse to the enactment of such a law, the very fact of herd-law agitation was ominous for the future of the range-cattle industry. Signs of changing times were also apparent in Yakima and Klickitat counties. "Running cattle in large bands in this country is fast getting to be a thing of the past," complained a Klickitat stockman, and this view was fully shared by a Yakima cattleman.⁵ Both spoke in bitter terms of the inroads of sheep on the ranges of these districts. In southeastern Washington free range had virtually disappeared by 1880. From this area herds of cattle had been driven north of the Snake River into the southern and western parts of the present Whitman County and into the Big Bend district of the Columbia River. Since the early seventies there had been a "sheep question" in the Walla Walla country, and in 1880 herd-law agitation was rampant in

⁵ Tenth Census, *Agriculture*, 3: 1090, 1091.

this area. The era of the wheat farmer was not far off. Both the extent and the intensity of cereal culture in southeastern Washington and in northeastern Oregon are clearly shown by the maps accompanying the "Report on the Cereal Production of the United States," published as a supplement to the *Report on the Productions of Agriculture as Returned at the Tenth Census*.⁶ In such circumstances it is not surprising that extensive eastward movements of cattle from the Columbia Basin were under way by 1880.

Two roads led from the ranges of the Far Northwest into Montana Territory. One was the Mullan Military Road, which ran in a northeasterly direction from Fort Walla Walla to the Spokane Valley, thence into northern Idaho, across the narrow neck of that territory into Montana, and thence to its eastern terminus at Fort Benton.⁷ The other route passed through southern Idaho by way of Boise City. Both were extensively used, but the importance of the Mullan Road for the cattle trade declined after the completion of the Northern Pacific Railroad in 1883 had brought the Columbia Basin economically closer to the ranges of eastern Montana.

References to the transportation of live stock from Oregon, Washington, and Idaho to Montana before 1880 are not so numerous as the student of this subject would desire. For the early years of the seventies one reads in the newspapers of the Far Northwest few notices of purchases of live stock for Montana, and these purchases appear to have been of horses and of sheep.⁸ The eastward movement of cattle in these years, if any took place, was undoubtedly slight. But for the latter part of the decade the record is clearer. In 1875 the surveyor-general of Montana declared that numerous herds of horses, cattle, and

⁶ *Ibid.*, 379-506, *passim*.

⁷ For an important reference to the use of the Mullan Road as a cattle route from the west to Montana, see the Rockford, Washington, correspondence of August 16, 1880, in the *Spokane Times* (Spokane Falls, Wash.), August 21, 1880, and in the *North-West Tribune* (Cheney, Wash.), August 25, 1880. See also the *North-West Tribune*, April 29, 1881.

⁸ *Walla Walla Union* (Walla Walla, Wash.), July 26, 1873; *ibid.*, March 27, 1875; *Weekly Mountaineer* (The Dalles, Ore.), August 28, 1875.

sheep were entering Montana from Oregon, Texas, and Colorado;⁹ and Granville Stuart wrote that in 1878 D. S. G. Flowerree bought in Oregon a thousand head of stock cattle for a range on Sun River.¹⁰ In the following year an emigrant, en route from Kansas to Washington Territory, came upon a drove of cattle on their way to Montana in the Rye Valley in northeastern Oregon. "We met a herd of cattle of 3,000 going to Montana," he wrote. "They are the poorest lot of cattle that we have met on the road mostly all stock cattle going to the Yellowstone country and from John Day valley."¹¹ On March 17, 1881, E. G. Brooke, a cattle buyer of Montana, wrote that of the several herds driven from Oregon and Washington in 1879 and in 1880, more than half had perished in the terrible winter which was just ending. "Out of the 1560 head which I bought while over in your section of country, for Davis, Hauser & Co., fully one-half have perished," he asserted.¹² Further evidence that western cattle were moving into Montana in the late seventies is furnished by an investigator for the Tenth Census, who observed that a stockman in the region southwest of Fort Benton was breeding Oregon cows to Shorthorn bulls. This man possessed a few more than three thousand head of cattle.¹³ It appears, therefore, that in the later years of the seventies several thousand head of western cattle were driven into Montana.

But probably in no previous year had the movement into Montana of cattle from Oregon and Washington been so extensive as that of 1880. Here one is on a more solid footing, for the findings of special investigators embodied in the reports of the Tenth Census are available. "In 1880," reads this record,

⁹ 44th Congress, 1st Session, *House Executive Document*, No. 1, Pt. 5, Vol. I, 230. See also the *Walla Walla Union*, March 27, 1875.

¹⁰ Paul C. Phillips (editor), *Forty Years on the Frontier as Seen in the Journals and Reminiscences of Granville Stuart . . .* (Cleveland, 1925), 2: 98.

¹¹ George D. Anderson, *Diary, MS.* (Library of the State Normal School, Cheney, Wash.), entry for July 29, 1879.

¹² "Stock Losses in Montana," in the *North-West Tribune* (Cheney, Wash.), April 29, 1881.

¹³ Tenth Census, *Agriculture*, 3: 1025. See also in the *Weekly Drovers' Journal* (Chicago, Ill.), January 1, 1885, a quotation from the *Stock Growers' Journal* (Miles City, Mont.).

"cattle were brought [into Montana] from the states of Oregon and Texas and from the territories of Washington and Utah; . . . Of cattle driven into Montana, 10,000 were from Washington territory; 16,725 from Oregon, of which 8,725 were driven to Custer county; 900 from Utah; 15,000 from Texas; 3,775 from Wyoming to Custer county; aggregating 46,400 head. There is a large consumption at the Indian agencies."¹⁴ It is difficult, however, to reconcile these figures with other statements in the same report that 11,000 head of cattle were moved from Washington Territory into Montana in 1880, and 8,000 head from Oregon.¹⁵ Nor are these the only discrepancies which mar the returns of the Tenth Census.¹⁶

But whatever may be the correct figures of the western live-stock movement into Montana in 1880, there can be no question that a great outpouring of cattle from the Far Northwest had begun, and that Montana to some extent was profiting therefrom. The history of the other phases of this eastward movement, however, falls outside the limits of this study.

For the early years of the eighties there is direct evidence that several thousand head of western cattle were driven to Montana ranges. In July, 1881, a herd of 1,000, which had wintered in the Grand Coulee of Washington, passed through Spokane Falls en route to Montana.¹⁷ About the same time a Montana newspaper recorded a movement to that territory of horses and cattle from Washington,¹⁸ and in August of this year a newspaper of Lewiston, Idaho, reported that R. Grostein had bought near Mt. Idaho nearly 1,000 head of cattle for Montana stockmen.¹⁹ In the following month *The Weekly Missoulian* asserted that "Jos.

¹⁴ Tenth Census, *Agriculture*, 3: 1026.

¹⁵ *Ibid.*, 1087, 1093.

¹⁶ Compare the statements relating to cattle brought into and sent out of Montana in 1880, *ibid.*, 1026-1027.

¹⁷ *Spokane Times*, July 14, 1881.

¹⁸ *The Weekly Missoulian* (Missoula, Mont.), July 29, 1881. The trade in horses from the Columbia Basin to Montana and Dakota during the late seventies and the early eighties appears to have been an important factor in the live-stock industry of the Pacific Northwest. A detailed study of the general eastward movement of live stock from this region should prove interesting.

¹⁹ *Teller* (Lewiston, Ida.), August 4, 1881.

Freeman, of Walla Walla, [had] arrived during the week with six hundred head of cattle, among which are some fine beef stock."²⁰

In the spring of 1882, a "Mr. Conrad and party" bought in northern Idaho and in eastern Washington "about 3,000 head of cattle . . . for driving through via Mullan road to Montana and Dakota."²¹ It was estimated that about 10,000 head of cattle would be driven east from this region during the spring "by four or five purchasing companies,"²² but there is no means of ascertaining how many of these were intended for Montana ranges. It is a matter of record, however, that in this year the Niobrara Cattle Company drove into Montana 10,000 head of Oregon cattle "and located them on Powder river."²³

Meanwhile the firm of Davis, Hauser & Co., which had been organized in the summer of 1879, with Granville Stuart as superintendent and general manager, had been buying thousands of head of Oregon cattle. By 1883 the herd of this company had grown to 12,000 head, all of which were a "good grade of range stock from Idaho and Oregon."²⁴ Furthermore, in September of this year, Kempton & Tusler, who had driven a large number into Montana from the west during the preceding season, were reported to be "again on deck with another fine herd numbering 2,500, which were purchased in Washington Territory. . . ."²⁵ It was said that this herd would be sent either to a Rosebud River range or to the Tongue River country.²⁶

The completion of the Northern Pacific Railroad in September, 1883, had an appreciable effect on the movement of western cattle to Montana. A Helena periodical, observing in June, 1884, that Wyatt & Ross intended to ship 4,000 head of Idaho cattle from Spokane Falls to Miles City, made the following comment: "This is the first shipment of Idaho cattle, it having previously

²⁰ September 9, 1881.

²¹ *Teller*, April 20, 1882.

²² *Ibid.*, April 27, 1882.

²³ Paul C. Phillips (editor), *Forty Years on the Frontier*, 2: 184.

²⁴ *Ibid.*, 2: 99, 178.

²⁵ *The Yellowstone Journal* (Miles City, Mont.), September 15, 1883.

been the custom to drive overland."²⁶ But it would be a mistake to assume that the coming of the railroad marked the end of the cattle drives from the Far Northwest to Montana. Driving continued to some extent throughout the eighties.

The year 1885 appears to have been the most important in the history of western cattle movements to Montana, although one can not be absolutely certain of this. The activities of Montana buyers in Oregon, Washington, and Idaho; the transportation of cattle to Montana from far-western shipping points on the Northern Pacific; and the rapid advance of prices of both stock and beef cattle as the season of 1885 progressed were events widely chronicled in Montana newspapers and in journals published in the farther west.²⁷ And the fact that Montana quarantine regulations did not apply to cattle purchased west of the Rocky Mountains was undoubtedly a stimulus to this trade.²⁸ To enumerate the recorded transactions of this traffic for 1885 would be tedious and of little value for the purposes of this study; but it should be noted that there were heavy shipments of western cattle to the Yellowstone country and to ranges near Fort Benton. A Mon-

²⁶ *Montana Stock and Mining Journal* (Helena, Mont.), June, 1884, p. 33. In the issue of this periodical for August, 1884, p. 65, is the following statement: "There passed through Helena on July 28, one hundred cars of cattle loaded at Spokane Falls and destined for Miles City. Wyatt & Ross were the shippers."

²⁷ *Montana Live Stock Journal* (Helena, Mont.), March, 1885, p. 171; *ibid.*, August, 1885, p. 12, 13; *ibid.*, December, 1885, p. 11; *Walla Walla Union*, April 11-May 30, and June 27 and September 5, 1885; *The River Press* (Fort Benton, Mont.), May 13, September 16, October 28, 1885; *Teller*, May 21, June 25, 1885; *Rocky Mountain Husbandman* (White Sulphur Springs, Mont.), May 28, July 2, July 23, September 17, October 29, November 19, 1885; *Weekly Yellowstone Journal*, August 8, August 22, September 26, 1885; *Weekly Drovers' Journal*, July 2, August 6, October 8, 1885.

The *Weekly Drovers' Journal* of July 2, 1885, reprinted the following from the *Northwestern Live Stock Journal*: ". . . The movement of Western cattle, (Western Idaho and Oregon) while not large, has been greater this spring than for several years. Montana and Western Wyoming have taken several thousand head of these cattle this year. They are large and thrifty, and our folks are always glad to get them. . . ."

The names of some of the newspapers and periodicals cited in this article changed from time to time. What may appear to the reader at times to be careless citation is only the result of an effort on the part of the author to keep abreast of these changes.

²⁸ *The West Shore* (Portland, Ore.), June, 1885, p. 161.

tana editor asserted on July 2 that up to that time there had been shipped into Montana from Oregon and from Washington Territory more than 30,000 head of cattle, of which number the greater part had been unloaded in the Yellowstone country.²⁹ Late in September of this year another Montana journalist declared: "The 6,000 head of cattle recently purchased by I. G. Baker & Co. in Oregon will be shipped at Wallula Junction on the 25th inst. The cattle will be unloaded at Helena about October 1st and driven to their range near Fort Benton."³⁰

So important had become the transportation by rail of western cattle into Montana by the summer of 1885 that notice was taken of this traffic in the official literature of the Northern Pacific. "The movement of young cattle into western Dakota and Montana has changed somewhat in its character during the past year," declares the annual report of the vice-president and general manager. "In 1883-4 we forwarded from eastern terminals 77,320 head and from Washington and Oregon 3,100 head. During the past fiscal year the offer of special rates has developed an important movement from our Western Divisions. There have been shipped from stations west of the Rocky Mountains 34,740 head of cattle, 3,360 horses, and 24,400 sheep. The shipments westward from eastern points aggregated 34,120 head of cattle."³¹

By this time the Northern Pacific, apart from the business which may have been brought to it by the Oregon Railroad and Navigation Company, was drawing trade from many of the stock districts of the Pacific Northwest. To its several stations between Spokane Falls and North Yakima were driven for shipment cattle from the Big Bend country, from northern Idaho, from southeastern Washington, from northeastern Oregon, and from the Yakima Valley; and the increasing numbers of settlers carried into this region by the railroad served to stimulate out-

²⁹ *Rocky Mountain Husbandman*, July 2, 1885.

³⁰ *The Weekly Yellowstone Journal and Live Stock Reporter*, September 26, 1885, quoting the *River Press*. See also the references cited in footnote 27, *ante*.

³¹ Northern Pacific Railroad, *Annual Report of the Vice-President and General Manager, to the President and Board of Directors, for the Fiscal Year Ending June 30th, 1885* (New York, 1885), 5.

ward movements of cattle. The era of extensive cattle raising in the Columbia Basin was hastening to a close. The railroad was rapidly transforming the economic life of the Pacific Northwest.

Owing to the lack of adequate statistics, it is difficult to determine the number of cattle moved from the Far Northwest into Montana in 1885. Of the number driven, one dares scarcely to hazard a guess. In respect of railroad shipments, however, there are figures which afford some basis for an accurate judgment. From the Yakima Valley alone, it has been asserted that between April 1 and October 31, 1885, there were shipped by rail to Montana and Chicago 37,477 head of cattle;³² but this is probably an over-statement. As early as the middle of April, however, a Walla Walla editor was told that about 10,000 head of cattle had been sold in the Yakima Valley "to Montana buyers for \$19 a head."³³ Late in July, a Montana newspaper informed its readers that "28,000 Washington Territory cattle" had already been shipped into Montana, and that 10,000 more were coming.³⁴ A few days later, there was published a statement of cattle shipments for that year "from Washington Territory to the Eastern Montana ranges." The stations from which these cattle were shipped and the number of cars loaded at each station were as follows: Yakima, 126; Kennewick, 90; Pasco, 41; Wallula, 202; Lind, 182; Sprague, 15; Spokane Falls, 104; total, 760.³⁵ Though these and other figures presented in a previous paragraph do not warrant the casting up of a total, they nevertheless appear significant when put alongside of statistics given to the press at the end of 1885 by R. B. Wilson, live-stock agent for the Northern Pacific. According to his figures, the shipments of cattle for the year from Washington Territory to Montana aggregated 38,070 head.³⁶

³² *Illustrated History of Klickitat, Yakima and Kittitas Counties . . .* (Inter-state Publishing Company, 1904), 178.

³³ *Walla Walla Union*, April 18, 1885.

³⁴ *Rocky Mountain Husbandman*, July 23, 1885, quoting the *Dillon Tribune*.

³⁵ *Weekly Drovers' Journal*, August 6, 1885, quoting the *Bozeman Chronicle*.

³⁶ *The Northwest* (St. Paul and Minneapolis), January, 1886, p. 22, quoting the *St. Paul Pioneer Press*. See also the *Montana Live Stock Journal*, January, 1886, p. 4, quoting *Bradstreet's*.

Assuming that this number is correct, and making allowance for a few thousand which undoubtedly came in by other routes, it would seem reasonable to suppose that in 1885 somewhat more than 40,000 head of western cattle entered Montana.

Early in 1886 heavy buying of cattle by Montana stockmen was reported in eastern Washington, northern Idaho, and western Oregon. Several shipments from these areas were recorded by local newspapers as the season advanced, and herds numbering thousands of cattle were said to have been sent out of southern Oregon to Montana.³⁷ Individual stockmen as well as companies were eagerly buying for the Montana ranges.³⁸ Some of these cattle were driven eastward, many more were shipped in Northern Pacific stock cars, and one herd of 4,000 steers was sent from eastern Oregon to Montana by way of the Oregon Short Line and the Utah and Northern.³⁹ This rapid importation of western cattle and the northward advance of southern herds "in undiminished numbers" were events fraught with danger to the cattle industry of Montana. Already the ranges were over-stocked, and a drought throughout the summer and early autumn of 1886 was drying up streams and withering the grass.⁴⁰ A severe winter was certain to be attended with heavy losses. Yet the optimism born of the boom years could hardly be expected to subside short of disaster.

³⁷ *Rocky Mountain Husbandman*, March 25, April 1, April 8, April 15, April 29, May 27, June 3, June 17, July 1, July 29, September 9, September 16, October 14, 1886; *Weekly Yellowstone Journal a. d Live Stock Reporter*, April 10, April 24, 1886; *Walla Walla Union*, May 29, 1886; *Teller*, April 1, May 20, 1886; *Willamette Farmer* (Salem, Ore.), February 19, June 4, 1886; *North-West Tribune*, June 3, 1886; *Weekly Drovers' Journal*, July 8, August 5, 1886; *National Live Stock Journal* (Chicago, Ill.), August 3, 1886, p. 485, quoting the *Ritzville (Wash.) Record*. Some of the western cattle which entered Montana in 1886 were driven thence into British territory north of the forty-ninth parallel. See the *Rocky Mountain Husbandman*, July 29, August 5, October 7, 1886.

³⁸ Among the Montana stockmen and cattle companies whose names appeared in the newspapers of this year were the following: Conrad Brothers, R. B. Briggs of the B. Ellis Cattle Company, Joseph Conroy, Home Land and Cattle Company, Bridger Cattle Company, Henry Sieben, Galloway Cattle Company, Montana Cattle Company, Murphy Cattle Company, Thomas & Arnett, Barrel Cattle Company, and John A. Hay.

³⁹ *Idaho Weekly Statesman* (Boise City, Ida.), May 8, 1886.

⁴⁰ Paul C. Phillips (editor), *Forty Years on the Frontier*, 2: 230.

But in spite of the foregoing evidence of active buying by Montana cattlemen, one finds it difficult to escape the conviction that the movement of western cattle into Montana was slightly less in 1886 than it had been in the preceding year. This, however is only an inference which, let it be admitted at the outset, can not be statistically verified. But the belief rests upon a careful examination of the newspaper utterances of the year and is supported by some knowledge of the general economic situation obtaining in the Pacific Northwest. Outward shipments and drives in previous years had reduced the number of cattle in this region—certainly this appears to have been the case in eastern Washington and in northeastern Oregon. Moreover, a rapidly growing population in the Far Northwest was providing more adequate local markets. Finally, the increasing trade in sheep and the rapid conversion of range lands into farms are facts not without significance. Such evidence, in the absence of opposing direct testimony, carries some conviction. Nor do the annual reports of officers of the Northern Pacific vitiate this view of the situation. The report of the vice-president and general manager for 1886 contains the following statement: "The ingoing stock movement of young and breeding cattle to the ranges of Montana Territory has undergone a remarkable change during the past two years. Formerly our shipments were from the East, and came from States tributary to our eastern terminals. Now they are nearly all from Oregon and Washington. Meanwhile the drives from Texas and the Indian Territory continue to increase each season. The ingoing Montana stock shipments for the year were about as follows: 28,000 head of young cattle from Washington Territory and Oregon, also 32,000 sheep from the same source, 19,500 young cattle from the East."⁴¹ It should be remembered, moreover, that this report covers the last half of 1885 and the first half of 1886, and cattle shipments from the west were probably heavier after June 30 than before. Equally inconclusive is the report of the board of directors of the

⁴¹ Northern Pacific Railroad, *Annual Report of the Vice-President and General Manager, to the President and Board of Directors, for the Fiscal Year Ending June 30th, 1886* (New York, 1886), 7-8.

Northern Pacific for 1887, the pertinent part of which reads as follows: "The shipments into Montana for stocking ranches during the year were, from the East and from Washington Territory 50,900 head of cattle, a few thousand more than last season; and into Montana from Washington Territory, 34,940 head of sheep."⁴² Unfortunately, this statement does not tell how many head of cattle were shipped in from eastern points, nor how much of the reported traffic belongs to the year 1887.

But whether or not the movement of western cattle into Montana in 1886 was equal to or greater or less than that of 1885 is not a matter of vital importance. That the trade was heavy in both years is undeniable. Of much greater significance is the rapid decline of this traffic after 1886.

Before the opening of the year 1887 evil days had come upon the cattle industry in Montana. Thousands of the western cattle which had entered this territory in 1886 had been advancing to their own destruction, though no one at the time could have foreseen the extent of the impending disaster. Drought and over-stocking were, to be sure, danger signs which all could see; but who in the autumn of 1886 could have foretold that a winter of unprecedented severity was close at hand? But it so fell out. The losses of cattle on the ranges of Montana during the winter of 1886-87 were simply appalling.⁴³ From the standpoint of severity one can only compare that season with the frightful winter which gripped the Far Northwest in 1861-62.⁴⁴ Yet the live-stock losses of the two winters are not comparable, for in 1861 the cattle industry in Oregon and in Washington was in its infancy, whereas in Montana in 1886 it was approaching its maximum development.

But the cattle industry of Montana, though a heavy blow had been dealt it, was not put to rout. Conditions favored rapid

⁴² Northern Pacific Railroad, *Report of the Board of Directors to the Stockholders at Their Annual Meeting, September 15, 1887* (New York, 1887), 64.

⁴³ Robert S. Fletcher, "That Hard Winter in Montana, 1886-1887," in *Agricultural History*, 4: 123-130 (October, 1930).

⁴⁴ For a brief history of the winter of 1861-62, see J. Orin Oliphant, "Winter Losses of Cattle in the Oregon Country, 1847-1890," in *Washington Historical Quarterly*, 23: 8-10 (January, 1932).

recovery, and by the close of the eighties there were more cattle in Montana than there had been in 1886.⁴⁵ To the rehabilitation of this industry, however, western cattle contributed little. For the later years of the eighties there are no records like those of 1885 and 1886 of movements of cattle from the Far Northwest to Montana. In the spring of 1887 the *Rockford (Wash.) Enterprise* stated that "quite a drove of cattle [had] passed through town Sunday, on their way to Montana,"⁴⁶ and in October of this year it was reported that C. E. Strong, a stockman from Granite Mountain, Montana, was in the Walla Walla country for the purpose of buying cattle.⁴⁷ But the scanty references in the newspapers of the Far Northwest to purchases of cattle by Montana buyers in 1887, 1888, and 1889 afford a striking contrast to the abundant notices of such transactions in 1885 and in 1886. One must conclude that the trade had become too slight to attract general attention. A few thousand head of western cattle were sent into Montana in 1888 and 1889, but the movement was principally from those areas of Idaho where the range-cattle industry had not been crowded to the wall by the advance of sheepmen and of farmers.⁴⁸ In 1889 and in 1890 official reports of the Northern Pacific contain no mention of the transportation of western cattle to Montana, but do stress the importance of the increasing shipments of western sheep into that territory. Whereas the report of the board of directors in 1889 speaks of the shipment during the preceding year of "some 47,600 head" of sheep from Washington Territory to Montana and Dakota ranges,⁴⁹ the report of the board in 1890 states that the "local movement" of stock sheep from the western end of the line to Montana and Dakota was nearly as heavy as the shipments out of these regions. "In addition to the number we carried to market," says the report, "there were shipped from

⁴⁵ Robert S. Fletcher, *op. cit.*, 130.

⁴⁶ Quoted by the *North-West Tribune*, May 5, 1887.

⁴⁷ *Walla Walla Union*, October 15, 1887.

⁴⁸ *Stock Growers' Journal*, May 4, July 20, December 14, 1889; J. Orin Oliphant, *The Range-Cattle Industry in the Oregon Country to 1890*, ch. 11.

⁴⁹ Northern Pacific Railroad, *Report of the Board of Directors . . . 1889* (New York, 1889), 32.

Washington and Oregon to Montana and Dakota, for grazing purposes, 101,400 head of stock sheep, an increase of 53,800 over the previous year."⁵⁰

One may conclude, therefore, that movements of cattle out of northern Idaho, northeastern Oregon, and eastern Washington for stocking ranges in Montana had virtually ceased by 1890. This trade, though not to be compared with the vast movement of cattle northward from Texas after the Civil War, had nevertheless been of economic importance, not alone to the Far Northwest but to Montana as well. To the former region, the trade had furnished during the boom years of the eighties an outlet for an industry in retreat; to the latter, it had been an important factor in sustaining the superior quality of Montana herds.⁵¹

⁵⁰ Northern Pacific Railroad, *Report of the Board of Directors . . . 1890* (New York, 1890), 25.

⁵¹ A passing reference to the influence of Oregon cattle in improving Montana herds is made by Professor E. S. Osgood, *The Day of the Cattleman* (Minneapolis, 1929), 138, *footnote*.

AGRICULTURAL ADAPTATION IN ENGLAND, 1875-1900

PART I

RAYMOND PHINEAS STEARNS

For thirty years or more prior to 1875 English agriculture reaped the benefits of favorable external and internal conditions. Externally, the world was experiencing a rise of prices coincident with rapidly depreciating gold values and the European world was engaged in a series of turmoils which furnished a ready market to the agricultural and manufacturing interests of neutral England. Internally, English agriculture was well adapted for the production of the types of products demanded by her belligerent neighbors on the Continent. They required cereals and animal foods and the English farmers specialized in these products. Simultaneously, other internal conditions favored the prosperity of British agriculture: the concentration and growth of population in the mining and manufacturing centers of England created a rapidly expanding home market. Thus, with an eager demand both at home and abroad it is not surprising that, as a whole, farmers prospered in England from about 1840 to 1875.

Since these profitable times arrived on the heels of the repeal of the Corn Laws, the English farmers saw therein the fulfillment of Cobden's prophecies and, aside from ominous rumblings by individuals here and there, free trade became their shibboleth even in the face of threatening foreign competition in the last quarter of the nineteenth century. The superiority of the English system became so fixed in the minds of British farmers that, in a period of high prices and ready markets, many threw discretion aside and expanded their holdings to a point where only a long-continued, even-keeled prosperity would enable them to extract themselves without disaster. Unfortunately this did not follow.

Before 1875 the rate of increase in the gold supply began to

diminish;¹ with the close of the Franco-Prussian War European demands for English agricultural products diminished as the continental countries produced a larger proportion of their own; and with the close of the American Civil War and the amplification of the railroad systems, United States' agricultural products entered the world market on a large scale. Russian peasant reforms and the growth of Canada and the Argentine furnished important additions later in the century. For the first time, the English farmer was faced with menacing competitors not only in his theretofore foreign markets but in his home market as well. In an era of lowering prices, competition became acute soon after 1875.

More important at the moment, however, was the series of adverse seasons which curtailed both the quantity and the quality of English agricultural production and enabled competitors to gain a sizable foothold on the English home market. The period between 1875 and 1900 was ushered in by a series of cold, wet seasons in England and in the early nineties and again at the end of the era came the opposite extreme in weather,—dry, scorching seasons. These two periods of unfavorable weather created unusually severe pressure on the British farmers just at the time when contracting markets, lowering prices, and foreign competition threatened. Economic pressure from an altered economic condition necessitated changes on the part of British farmers. From an era of prosperity English agriculture entered a period of depression from which it could emerge only by the aid of tariff protection which it scorned or by adaptation and change which British farmers dreaded. By degrees, however, certain changes occurred; with much grumbling farmers turned to new methods and different products. The process was painful and slow, *forced* as it were, by necessity. In a sense, it came only after a futile period of waiting for the return of former conditions. But it *did* come; the portrayal of this adaptation is the purpose of this paper.

Over a quarter century of agricultural depression was ushered

¹ Pierre Besse, *La Crise et L'Évolution de L'Agriculture en Angleterre de 1875 à Nos Jours; Essai d'Histoire Économique* (Paris, 1910), 55-57.

in by the bad seasons which began with the inclement autumn of 1872 and the poor spring of 1873. Wet and cold summers followed and the harvests of 1875, 1876, and 1877 were deficient in both quantity and quality.² Partly because of the resultant inferior quality of English wheat and other products, prices were lowered practically coincident with the less abundant harvests. The following data³ showing the percentage movement in wholesale prices of twenty-two principal commodities, the average price of the five years 1865-1869 inclusive, being taken as 100, illustrates the trend:

January 1	Wheat	Butchers' meat	Sheep's wool	Average totals of 22 commodities
1870	80	102	72	91
1871	100	111	66	90
1872	104	112	100	97
1873	104	120	118	102
1874	116	122	105	100
1875	80	114	109	95
1876	84	127	100	93
1877	97	115	106	94
1878	98	112	91	87
1879	75	105	80	76
1880	88	99	88	87
1881	82	122	90	81
1882	84	104	81	83
1883	77	121	80	79
1884	73	103	73	75
1885	60	102	69	70
1886	57	90	67	61

Joseph Martin, a farmer, testified in 1886 that he sold wheat from 1871 to 1877 at an average price of 25 s. $7\frac{1}{2}$ d. per coomb;⁴ but from 1878 to 1884 the average price was only 19 s. $11\frac{1}{2}$ d. per coomb.⁵ The lower prices, however, could not be caused by

² *Second Report of the Royal Commission Appointed to Inquire into the Depression of Trade and Industry* (London, 1886), 298-299. Hereafter this authority is cited as *Second Report*. Cf. also Rowland E. Prothero, *The Pioneers and Progress of English Farming* (London, 1888), 121-123.

³ *Third Report of the Royal Commission Appointed to Inquire into the Depression of Trade and Industry* (London, 1886), Appendix, 343. Hereafter this authority is cited as *Third Report*.

⁴ A coomb is one-half of a quarter, or four bushels.

⁵ *Third Report*, 49-51.

poor seasons. Other factors must have played a part. First among these was the contraction of the English market for agricultural products after the close of the Franco-Prussian War. British cereals and meats were no longer in such demand on the Continent as formerly. The natural result was a lowered price for English products. A second, though less tangible factor, was the appreciation of gold which began soon after 1870.⁶ The third, and ultimately very important factor, was the increase in foreign competition offered to English farmers. Thus, while the worst English wheat crop for years occurred in 1879, the price fell unchecked due to the swelling foreign supply of wheat on English markets.⁷ A fourth severe blow to the English agriculturalist was the disease which afflicted his sheep and cattle in the late seventies and early eighties as a result of continued damp weather. Liver-rot ("fluke") killed thousands of sheep while pleuro-pneumonia and hoof-and-mouth disease attacked cattle. Between 1875 and 1880 the total number of cattle in the United Kingdom fell from 10,163,000 to 9,871,153; the number of sheep fell from 33,492,000 to 30,239,620; and pigs fell from 3,495,000 to 2,863,488.⁸ The loss of such numbers of livestock was a severe blow coming concurrently with lowered prices, subnormal harvests, and an active foreign competition. Further complications arose out of the fact that the preceding quarter century had been unusually prosperous and, as so often happens, British farmers had expanded while prices were high and "times were good." Between 1857 and 1875 the gross annual land assessed to the income tax in England rose 21 per cent in value, an average annual increment of about £470,000.⁹ The depression following 1875, then, was the more aggravated by a previous over-expansion in agriculture. The British farmer found that he

⁶ Besse, *op. cit.*, 40, 61-66.

⁷ The chief sources of this foreign supply were the United States, Russia, and India. The following figures illustrate what occurred both in home and foreign supplies of wheat: home production in 1852,—69,000,000 cwt., in 1883,—39,000,000 cwt., foreign imports in 1852,—18,000,000 cwt., in 1883,—84,000,000 cwt.

⁸ Besse, *op. cit.*, Appendix, 358-359.

⁹ Sir James Caird, *The Landed Interest and the Supply of Food* (London, 1878), 97.

could not pay the debts he had contracted earlier when gold was depreciated and prices were higher.

What could be done? The obvious thing was to turn to the breeding and fattening of cattle and sheep for meat prices appeared less depressed than cereal returns.¹⁰ "It was a common remark among farmers during the period in question that the right thing to do was to give up corn-growing to some extent, and to produce meat on a larger scale;"¹¹ But men who had raised corn crops successfully for years were not prone to change; they had followed a time-tried rotation of crops which admitted no alteration (so they felt) without a depreciation in land culture. In the remoter counties, especially those of northern England, farmers tended to change their system only after stubborn and prolonged resistance. In many cases, doubtless, changes came only with a new generation. The report of John Coleman, assistant commissioner for the Commission of 1886, declared that many Westmoreland and Cumberland farmers suffered because they "are behind-hand in science, or will not take the trouble to produce a better article to suit the demand."¹² Joseph Arch, former farm laborer and president of the National Agricultural Labourers' Union, testified that farmers were too tied to custom and had failed to watch "the advance of the time."¹³

Some observers, on the other hand, saw that diversification was the first aspect of adaptation. ". . . We as English farmers must pay more attention to little things than ever we did before, and . . . we must grow vegetables for the larger towns, and produce butter and milk for the same class of people . . . growing corn on large extensive farms and meat producing on the Norfolk and Bedfordshire system is not going to pass as it has done. . . ."¹⁴ Some farmers turned to dairying or to new crop

¹⁰ See the tabulation in the text above

¹¹ William E. Bear, *The British Farmer and His Competitors* (London, 1888), 71.

¹² *Third Report*, 58.

¹³ "Final Report of the Royal Commission on Agriculture," in *Parliamentary Papers*, XIV (1) 1882, p. 77, Question 60, 157 (London, 1882).

¹⁴ Evidence of John Coleman, Derby agent, "Report of Royal Commission on Agriculture," in *Parliamentary Papers*, XV (1) 1881, p. 206, Question 5905 (London, 1881); Besse, *op. cit.*, 124.

experiments and, more adaptable, they profited.¹⁵ But their numbers were small, comparatively speaking; as a whole the farmers of England simply continued as before, hoping for the return of their former prosperity.

One of the first thoughts of the farmers was to demand lower rents. In common with other prices, land rates had risen considerably in the era preceding 1875. But between 1876 and 1886, rents in Durham and the North Riding of York were reduced by 25 to 30 per cent.¹⁶ Wheat lands in general rented at about 25 per cent less; the western, or grazing counties, experienced a similar reduction.¹⁷ Sir James Caird, the senior land commissioner for England, testified in 1886 that landlords had suffered an average reduction of rentals equal to 30 per cent of the totals. Tenants and laborers, who, as a whole, had less to lose, suffered an even greater loss of income.¹⁸

Since corn crops were no longer profitable and many farmers were forced to contract expenses, the area of pasture lands increased rapidly. Thomas Huskinson, a farmer in the Midland counties, maintained that the turning of land to grass was merely the abandonment of "unprofitable cultivation . . . in pursuance of economic laws."¹⁹ Throughout the United Kingdom the movement was carried on;²⁰ the area under permanent pasture in England increased from 10,536,283 acres in 1875 to 12,229,815 acres in 1885,—a gradual and continual increase during the entire decade.²¹ Alongside this movement came a rapid curtailment in the area of wheat lands offset only in part by an increased area in oats and barley.²² The prices of oats and barley de-

¹⁵ *Third Report*, 64-69.

¹⁶ *Second Report*, part 1, p. 293-294.

¹⁷ *Ibid.*, 294-295.

¹⁸ *Ibid.*, 295-296.

¹⁹ "Report of the Royal Commission on Agriculture," in *Parliamentary Papers*, XV (1) 1881, p. 159.

²⁰ See the testimony of George Rea, Northumberland farmer, in the *Third Report*, 43-44.

²¹ Besse, *op. cit.*, Appendix 4, p. 352-353. Compiled from the *Agricultural Statistics*. See Appendix, p. i.

²² Caird, *op. cit.*, 1-15; *Second Report*, part 1, p. 300-308.

creased less in proportion than those of wheat²³ and the former were more useful in livestock feeding.²⁴ The following data²⁵ shows the changes in the acreage of these crops in the United Kingdom, the yearly averages being of the quinquennial periods: wheat dropped from 3,737,140 in 1871-75 to 3,190,066 in 1876-80, and to 2,829,584 in 1881-85; barley rose from 2,598,713 in 1871-75 to 2,752,850 in 1876-80, and dropped again to 2,478,870 in 1881-85; oats dropped from 4,233,277 in 1871-75 to 4,170,325 in 1876-80, but rose to 4,296,113 in 1881-85. For England only—in specific years—the data is as follows: wheat, in 1875,—3,128,547; in 1880,—2,745,735; in 1885,—2,349,305; barley, in 1875,—2,090,423; in 1880,—2,060,807; in 1885,—1,894,350; oats, in 1875,—1,421,951; in 1880,—1,520,125; in 1885,—1,647,549. It is to be noted that the initial impulse was an increase in barley; later, the trend turned to oats.

The depleted capital of the tenants and small owners led, in many cases, to poorer cultivation of the soil. The Liverpool Chamber of Commerce reported in 1886 that the "agricultural depression [was] affecting demand for manures and feeding stuffs."²⁶ The wet seasons of the late seventies left the topsoils deficient in soluble salts and want of capital prevented the application of needed fertilizers.²⁷ Many fields were permitted to "tumble down" to grass naturally. The less depressed condition of the beef and mutton market led to an attempt, even in the face of wide-spread livestock disease, to breed cattle and sheep. The Richmond Commission noted in 1882 the "extensive adoption of dairy-farming and cattle-breeding upon arable land. . . ."²⁸ Dairy farmers, especially those near good

²³ "Agricultural Statistics, 1901," in *Parliamentary Papers*, LXXXVIII (52) 1901, p. 112.

²⁴ *Third Report*, 41-42.

²⁵ Compiled from the *Agricultural Statistics*. See also Besse, *op. cit.*, Appendix 4, p. 352-353.

²⁶ *First Report of the Royal Commission Appointed to Inquire into the Depression of Trade and Industry* (1886), 93.

²⁷ "Report of the Royal Commission on Agriculture," in *Parliamentary Papers*, XV (1) 1881, p. 82, 137-151.

²⁸ "Final Report of Royal Commission on Agriculture . . . , " in *Parliamentary Papers*, XIV (1) 1882, p. 12.

markets, profited so well that frequently their landlords found it unnecessary to lower the rents.²⁹ The total number of cattle increased from the period 1876-1880 to 1881-1885 by nearly 361,000.³⁰ Of these, approximately only 39,000 were dairy cattle; the great increase, in these years, was in *beef* stock.³¹ Farmers in the grain areas began to feed more of their crops to cattle; the ensilage system extended, more winter feeding was carried on, and the Durham type of beef cattle flowered. Farmers found that silos rendered them more independent of the weather in preserving grass and corn crops. New types of silos were perfected and, in spite of much blind prejudice which retarded the rate of increase, the number and capacity of silos increased in Yorkshire, the southeast, and west Midland Counties.³² Sheep-raising was seriously hampered by the prevalence of disease and sheep farmers suffered as serious losses as grain growers. The total number of sheep declined from an average of 31,906,248 in the era 1876-1880, to 28,631,008 in the five years after 1880. The decrease, however, was evidently heaviest among wool producers which suggests that the lowering price of wool affected the total as well as the inroads of disease.³³

The conditions of the initial depression affected grazers and grass farmers less adversely than it weighed upon the grain farmers in the arable sections of England. Local conditions, however, led to many variations. Farmers established on the best lands in the grain-producing areas suffered little. Individual farmers with sufficient capital could weather the storm more easily than the large number whose capital was depleted. The

²⁹ "Report of Royal Commission on Agriculture," in *Parliamentary Papers*, XV (1) 1881, p. 12.

³⁰ For the quinquennial periods. See the "Agricultural Statistics, 1902," p. 40-41, in *Parliamentary Papers*, LXXXII (47), 1903.

³¹ *Ibid.*; Cf. also Thomas Farrall, "A Report on the Agriculture of Cumberland, chiefly with Regard to the Production of Meat" in the *Journal of the Royal Agricultural Society of England* (2d series) 10: 402-429 (London, 1874).

³² *Parliamentary Papers*, LXX (33), 1886, p. 80-81; Besse, *op. cit.*, 132; "Final Report of the Private Ensilage Commissioners," in *Parliamentary Papers*, XIX (7), 1886, p. iv-ix, 69 ff.

³³ "Agricultural Statistics," in *Parliamentary Papers*, LXXXII (47), 1903, p. 40-41.

degree of injury varied according to the size of the holdings: very large farms with consequently heavy capital investments, while they suffered heavy losses, were able to effect economies and to adapt themselves more readily; small farms capable of cultivation by one man with the help of his family reduced labor expenses and turned readily to diversified agriculture; but the middle-sized farms with neither large capital nor the ability to retard labor bills without undue sacrifice suffered most heavily.³⁴ Conditions favored large farms of five hundred acres or more; smaller farms were often thrown together by landlords and farmed as one unit in order to economize on managerial expense and to gain the fullest benefits of mechanized tillage methods.³⁵ While the small owner could effect labor economies and survive for the moment, unless he were favorably situated on good land and near ready markets which enabled him to produce fruits, vegetables, or milk, he could not maintain himself for long. Many turned to cheese and butter making with indifferent success; others extended the potato area of England which, while decreasing in Great Britain as a whole, increased in England proper from 320,471 acres in 1875 to 359,026 acres in 1885.³⁶ In addition to these general changes, the method of renting farms by long leases tended to disappear. Tenants were unwilling to obligate themselves for long terms in such uncertain times and the yearly tenant became more and more usual where seven, fourteen, or twenty-one year leases had existed before. This movement increased still more before the century was ended.³⁷

Generalizations, however, are exceedingly dangerous. English agriculture is very diversified by virtue of varying geographical, geological, and climatic conditions. For these reasons it is necessary to view the agrarian situation in each section of the country. No division is sufficiently minute to account for every

³⁴ "Report of the Royal Commission on Agriculture," in *Parliamentary Papers*, XV (1) 1881, p. 137-151; *Third Report*, 58-61.

³⁵ Prothero, *op. cit.*, 157.

³⁶ See *Agricultural Statistics* for the various years, 1875-1885; Cf. also Besse, *op. cit.*, Appendix 4, p. 352-353.

³⁷ "Report of the Royal Commission on Agriculture," in *Parliamentary Papers*, XV (1) 1881, p. 1-12, 31-45.

local difference but the areas set off by the Board of Agriculture in the *Agricultural Statistics* establish roughly unified groups of counties for which specific information is available.³⁸

The northern and northwestern counties of England have a reputation for conservatism. But a curious contrast becomes apparent at once, for while the strictly northern counties clung stubbornly to the old ways, the northwestern group quickly changed tactics. The parliamentary investigator for York wrote in 1881 that ". . . it is remarkable that little or no alteration has been made in the system of farming."³⁹ The annual Norfolk or "four crop" rotation was followed in the main, sheep were plentiful, and farmers still relied upon the old products, grain and sheep.⁴⁰ But the pressure was becoming too severe to be withstood much longer. Here and there farmers complained of their leases which required them to follow the Norfolk rotation and forbade them to sell hay, straw, and other produce from their farms or to raise two corn crops in succession on the same soil.⁴¹ Many broke away and defied their landlords; Mr. Coleman reported in 1881: "It is quite certain that Durham farmers would be in a much worse plight than they are if held within the

³⁸ England is divided into two sections: the Eastern or arable section, and the Western or grass section. Each of these is in turn subdivided. The Arable Section, that is Eastern England with less than 33½ per cent permanent pasture, includes Division I consisting of the Eastern counties of Bedford, Huntingdon, Cambridge, Suffolk, Essex, Hertford, Middlesex, and London, and the Northeastern counties of Norfolk, Lincoln, and York (East Riding); and Division II consisting of the Southeast counties of Kent, Surrey, Sussex, Berkshire, and Hampshire, and the East Midlands of Nottingham, Leicester, Rutland, Northampton, Buckingham, Oxford, and Warwick. The Grass Section, that is Western England with over 66½ per cent permanent pasture includes Division III, consisting of the West Midland counties of Salop, Worcester, Gloucester, Wiltshire, Monmouth, and Hereford, and the Southwestern counties of Somerset, Dorset, Devonshire, and Cornwall; and Division IV consisting of the Northern counties of Northumberland, Durham, and York (North and West Ridings), and the Northwestern counties of Cumberland, Westmoreland, Lancashire, Cheshire, Derby, and Stafford.

³⁹ "Report of the Royal Agricultural Commission," in *Parliamentary Papers*, XVI (2) 1881, p. 140.

⁴⁰ *Ibid.*, 140-176; and *ibid.*, XV (1) 1881, p. 225-231.

⁴¹ *Ibid.*, XV (1) 1881, p. 225-231.

limits of old-fashioned agreements."⁴² Customs, however, were often stronger than contracts in retarding the rate of change and the shifts in crop rotation illustrated a tendency rather than a *fait accompli*.⁴³ More frequently the lowered returns from wheat and wool were shifted upon the shoulders of those least able to bear the burden, the laborers. Fewer men were employed and wages were reduced.⁴⁴ At the same time rents were lowered on nearly all farms and the "marginal farmers," in many instances, "threw up" their land; others clung to their farms only because quitting meant the loss of fifty to sixty per cent of their investment.⁴⁵ The evidence shows that the farmers on poorer soils, wool producers, and wheat growers suffered most heavily. The larger farms under good management weathered the storm well and "those who have suffered least are the small stock-rearing and dairy farmers who work within themselves and who have no Saturday night to meet,"⁴⁶ i.e., those who farmed 100 to 150 acres without hiring labor. The small holders of 8, 10, or 20 acres, barring exceptional cases, were applying for poor relief; George Rea, a Northumberland farmer, looked upon the "three acres and a cow" idea "as all claptrap nonsense" so far as the northern counties were concerned.⁴⁷ Serious inroads on the old system of rotation were made by the contraction of hired labor and the abandonment of poorer soils. The extent of permanent pasture lands rapidly expanded, largely at the expense of former corn and green crops. The movement in Northumberland alone is illustrated by the following data:⁴⁸ corn crops shrank from 134,136 acres in 1875 to 130,743 acres in 1880, and by 1885 totalled only 118,565 acres. Green crops underwent similar diminutions: 59,874 acres in 1875; 56,096 acres in 1880; and 53,383 acres in 1885. Meanwhile, the area in permanent pasture rose from

⁴² *Ibid.*, XVI (2) 1881, p. 230.

⁴³ *Ibid.*, 140-176; and *ibid.*, XV (2) 1882, p. 3-28.

⁴⁴ *Third Report*, 38-40, 41.

⁴⁵ *Ibid.*, 38-41.

⁴⁶ *Ibid.*, 53.

⁴⁷ *Ibid.*, 40-41.

⁴⁸ Compiled from the *Agricultural Statistics* for the years quoted.

377,910 acres in 1875 to 417,184 acres in 1880, and to 440,269 acres in 1885.

Depression affected the northwestern counties less harshly. Situated near commercial and manufacturing centers they were able to turn to the sale of market garden produce, hay, straw, and dairy products.⁴⁹ The Royal Agricultural Commissioner for Cumberland and Westmoreland wrote that ". . . agricultural depression does not exist,"⁵⁰ and the same impression is gained from the evidence relating to Derby and Cheshire.⁵¹ Unlike the eastern farmer who chafed because custom and contract forbade the sale of hay and straw even when profitable, the western county men were unhampered by such restrictions.⁵² Dairying, moreover, proved to be the chief advantage held by the western farmers. A great increase in grass lands and the number of cattle demonstrates the movement. Cumberland grass lands increased from 261,979 acres in 1871 to 322,780 acres in 1880; at the same time the number of cattle rose from 121,410 to 132,032.⁵³ Two comparatively new methods of marketing dairy products were extended. From the home manufacture of butter and cheese, dairymen turned to the sale of fresh milk which was shipped to London, Manchester, Sheffield, Birmingham, and elsewhere.⁵⁴ The private manufacture of cheese so long established in Cheshire gave way to the more economical methods of cheese factories whose product was more uniform and marketable. The competition of American cheese forced the British dairymen to create a more uniformly high quality product and the cheese factory method was their answer.⁵⁵ The sale of milk, however, was even more profitable and dairymen frequently gave up cheese making

⁴⁹ "Report of the Royal Agricultural Commission," in *Parliamentary Papers*, XV (2) 1882, p. 29-44. Mr. Coleman's Report on Lancashire.

⁵⁰ *Ibid.*, XVI (2) 1881, p. 234.

⁵¹ "Report of the Royal Agricultural Commissioner," in *Parliamentary Papers*, XVI (2) 1881, p. 54; XVII (3) 1881, p. 35, 54-72, 917-919, 941-947.

⁵² *Ibid.*, XV (2), 1882, p. 29-44.

⁵³ *Ibid.*, XVI (2), 1881, p. 234-251. Mr. Coleman's Report.

⁵⁴ *Ibid.*, XVII (3) 1881, p. 35. Evidence of Mr. S. B. L. Druce.

⁵⁵ *Ibid.*, p. 941-947; Cf. also Mr. Coleman's Report on Cheshire, *ibid.*, XV (2) 1882, p. 54-72.

entirely in favor of the fresh milk trade.⁵⁶ The northwestern counties, then, proved more adaptable to the new era of English agriculture than did their eastern neighbors.

Less clear distinctions occurred between the eastern and northeastern counties. In the main, the northeastern group, such as York, Durham, and Northumberland, clung to the old system of cropping with corn and sheep. Norfolk and Lincoln, too, were still largely corn counties with some cattle and sheep fattening and some horse breeding.⁵⁷ These counties were severely depressed, rents were lowered, the farmers' capital was depleted, and the cattle and sheep were seriously affected by disease. The small farmers lacked markets for those products which proved so profitable in the regions near cities. As a result they suffered most of all; "they were positively beggars," testified a Norfolk farmer.⁵⁸ This situation led to a movement to consolidate farms into larger units which, except in the Isle of Ely, was carried on throughout the northeastern counties.⁵⁹ The Isle of Ely, strangely enough, consisted of a large number of small farmers who specialized in potatoes to a large degree. These men had mortgaged their holdings in many cases in an effort to stem the tide of disaster.⁶⁰ Taken as a whole, the corn counties of the northeast were in a bad way about 1885 and, evidently the farmers did little about it except await the return of the "good old times."

The eastern counties offered a more diversified picture. Here again farmers demanded freedom of cropping and of sale. The prosperity of urban areas which offered markets for hay, straw, and garden produce accentuated the demand and materially ameliorated the condition of those farmers who practised it.⁶¹ The more easterly counties, like those of the north, were largely "corn counties" and they suffered the same ailments experienced in Lincoln and Northumberland. Labor costs were reduced, land was put to grass, the standard of cultivation low-

⁵⁶ *Ibid.*, XVII (3) 1881, p. 917-919. Evidence of Thomas Rigby.

⁵⁷ Mr. Druce's Reports, in *Parliamentary Papers*, XV (2) 1882, p. 64-69, 50-60.

⁵⁸ *Ibid.*, XVII (3) 1881, p. 740. Evidence of Mr. Henry Overman.

⁵⁹ *Ibid.*, XV (2) 1882, p. 50-60, 64-69.

⁶⁰ *Ibid.*, XVI (2) 1881, p. 384-390; Cf. also *Third Report*, 48-49.

⁶¹ *Parliamentary Papers*, XIV (1) 1882, p. 14-15.

ered, and many farms were left unoccupied. In fact, of the 321 unoccupied arable farms in England in 1882, 132 were in these eastern counties.⁶² But certain areas presented a more favorable picture. In Middlesex, market gardening flourished by reason of the nearby London market; in 1881 Middlesex had the largest garden acreage of any English county and the area increased steadily. Farmers turned from grain crops to cabbage and cauliflower and no complaints of depression were prevalent.⁶³ Near Wisbech a considerable amount of garden produce and small fruit was grown and sold to a small factory which became a large canning and jam establishment before 1900.⁶⁴ In Huntingdon a farmer tried the poultry and egg business with much success.⁶⁵ These brighter spots, however, marked a prophecy of what was to come more than they demonstrated what had been done. For as a whole, the eastern counties were still tied down by the customary system of cropping and by restrictions which forbade the sale of the most easily marketable products.⁶⁶ Disease and the sale of livestock in order to raise capital had depleted the herds of cattle and sheep, land was poorly cultivated and often permitted naturally to "tumble down" to grass.⁶⁷

Nearly everywhere in the east midland and southeastern counties farmers deserted corn crops for grass, dairy cattle, market gardens and fruit. The proximity of markets and the small farm tradition arising out of the hop district in Kent and in Sussex doubtless facilitated the changes. Rutland alone appears to have clung to the former system probably because of its isolation from markets, the character of its soils, and its nearness to the old grain areas.⁶⁸ Leicester, Kent, Sussex, Surrey, Wiltshire, and to a lesser degree, Berkshire and Hants, rapidly increased

⁶² This refers only to farms of 5 acres or more. See Mr. Druce's Report, in *Parliamentary Papers*, XV (2) 1882, p. 21.

⁶³ *Parliamentary Papers*, XV (2) 1882, p. 61-62. Mr. Druce's Report.

⁶⁴ *Ibid.*, 14-40.

⁶⁵ *Ibid.*, 43-44.

⁶⁶ *Ibid.*, 10-13.

⁶⁷ *Ibid.*, 33-39.

⁶⁸ *Ibid.*, 87-90.

their areas in grass, garden stuffs, and fruits.⁶⁹ The number of sheep diminished while dairy cattle multiplied. Everywhere depression was worse where the farmers clung to wheat raising. The hop industry centering about Kent remained profitable almost alone among the ancient crops. Enterprising farmers found new opportunities in the exploitation of the urban dairy, fruit, vegetable, and hay markets.

Looking westward to the more strictly "grazing counties," about the same developments took place. Beef and mutton production was gradually replaced by dairying while the character of dairy products changed from cheese and butter-making to the fresh milk trade.⁷⁰ Farmers felt that they must adapt themselves "to the changing circumstances, and do more in the way of milk, butter, eggs, poultry, and all those little things . . . (and) give up growing wheat at a loss."⁷¹ At Gillingham, Dorset, the farmers established a milk factory to facilitate the marketing of milk to London. The larger supply enabled them to gain more favorable contracts while the element of control thus set up made possible a more uniform quality.⁷² A large amount of the dairying was carried on very inefficiently, however. Butter was churned by hand—"You see a great strong girl stirring round the bowl with her bare arms till it becomes butter."⁷³ The resulting lack of uniformity and sanitation in butter and cheese making caused the market to become steadily less and less alluring and the dairymen turned to milk selling for more profits. Many of the dairies were operated not by the farmer but by "dairymen" to whom the cattle were leased yearly. The dairymen took care of all the cows, milked them, and sold the produce while the farmer (who owned the cattle) fed the cattle and received a defi-

⁶⁹ Evidence of Mr. K. B. B. De La Bere, in *Parliamentary Papers*, XIV (1) 1882, p. 157-165; Mr. Little's Report, in *Parliamentary Papers*, XVI (2) 1881, p. 401-421.

⁷⁰ See Mr. Little's Reports on Somerset and Dorset, in *Parliamentary Papers*, XV (2), 1882, p. 22-38.

⁷¹ Evidence of R. H. Lipscomb, in *ibid.*, XVII (3), 1881, p. 719-730.

⁷² Mr. Little's Report on Dorset, in *Parliamentary Papers*, XV (2) 1882, p. 22-30.

⁷³ Evidence of R. H. Lipscomb, in *Parliamentary Papers*, XVII (3) 1881, p. 730.

nite sum per head from the dairymen. This system of specialization was brought about, so the farmers stated, by the inability to hire dairy maids and the refusal of wives and daughters to perform the traditional services. It would appear, however, that the system arose out of a prejudice against such work by farmers and male laborers plus a general cessation of women labor on the farms arising with an improved standard of living.⁷⁴

Accompanying the increase and changes in dairying the area in orchards and small fruit rapidly expanded between 1875 and 1885. About forty-seven per cent of all the orchards in England were located in the southern counties; between 1873 and 1881 the area in Kent increased by 64 per cent, in Somerset by 25 per cent, and in Devon by 6 per cent.⁷⁵ At the same time, in common with the movement over all England, the permanent grass area increased and the grain area decreased. In Cornwall grain crops decreased by ten per cent between 1870 and 1881; Mr. Little reported that corn was an "accident" in Cornwall, the main object being to produce grass, cattle, and a decreasing number of sheep.⁷⁶

The west midland group underwent approximately the same experience as the southwestern counties. The grass districts suffered least, dairying increased, and cheese-making was replaced by the shipping of fresh milk to Bristol, Birmingham, and Coventry.⁷⁷ Market gardening developed somewhat more in Worcester, Warwick, Stafford, and Gloucester than in the southwest of England. Farmers began to replace barley and turnips with cabbages, cauliflower, and peas.⁷⁸ Here, as in the northeastern counties, the farmers felt the weight of limitations in their covenants: they were not permitted to sell hay, straw, or

⁷⁴ *Ibid.*

⁷⁵ Mr. Little's Report, in *Parliamentary Papers*, XV (2) 1882, p. 39-42, 12-21; XIV (1) 1882, p. 376.

⁷⁶ "Report of the Royal Commission on Agriculture," in *Parliamentary Papers*, XV (2) 1882, p. 1-12.

⁷⁷ Evidence of Mr. Andrew Doyle, in *Parliamentary Papers*, XVII (3) 1881, p. 92-108, 177.

⁷⁸ Evidence of Mr. Charles Randall, in *Parliamentary Papers*, XV (1) 1881, p. 184-5.

roots and there was a determined effort made to abolish these "obsolete restrictions" which "almost prescribed what was to be done in every month of the year."⁷⁹ Wales, like the rest of the grazing area of western England, was affected less seriously by the depression than the grain areas. The Welsh had smaller farms generally, hired little labor, and raised little wheat. They produced oats and barley some but theirs was a breeding region where cattle and sheep were reared to be sold in England for grazing.⁸⁰ Disease had reduced the number of sheep in Wales since 1875. Like its eastern neighbors the grain areas had decreased, making way for an extension of grass lands. Stock breeding and small dairies proved fairly profitable to the Welsh farmers.⁸¹

The depression following the years 1875 to 1880 led to comparatively few changes in English agriculture. In general the eastern half of England kept on producing grain crops, the western counties continued grazing and the counties of southern England extended orchards and gardens somewhat where markets were near at hand. Mere tendencies towards change emerged on the farm in the form of new rotation systems which led to an extension of grass areas, an increase in dairying, the genesis of new methods of handling dairy products, and the demand for freedom of cropping and sale. The total area affected by these developments was small and doubtless in the reports of investigators, the changes themselves were over-emphasized. To notice new methods was one of the specific functions assigned to the Commissioners.

In the early eighties the series of wet seasons gave place to normal weather conditions and farmers hopefully awaited the return of prosperity. But the wet years had washed away the soluble salts in the soil which was left weedy and difficult to till. The English farmers, with the return of normal climatic condi-

⁷⁹ Evidence of William Sturge, land agent, in *Parliamentary Papers*, XV (1) 1881, p. 128ff.; XVI (2), 1881, p. 259-360, and appendices, p. 102, 105, 107-108, 111-112.

⁸⁰ Evidence of R. B. Clough, in *ibid.*, XVII (3) 1881, p. 598-604; XV (2) 1882, p. 1-11.

⁸¹ *Ibid.*, XV (2) 1882, p. 1-11; XV (1) 1881, p. 246-253.

tions, even extended the wheat area again in the latter eighties.⁸² In fact, after more severe depression returned in the early nineties, the Royal Commissioner appointed to investigate the eastern counties declared: "I cannot help thinking that if Essex-men had only looked ahead 10 or 15 years ago neither (crisis) would have arisen. They stuck to the very system of farming and persisted in growing the very crops which gave every indication of giving way before the weight of foreign competition, and in so doing they courted and invited their own ruin."⁸³ The same statement applied, however, not only to Essex but to all England.⁸⁴ The depression following 1875 had taught the farmers almost nothing; with the return of regular seasons they simply waited, Micawber-like, for "something to turn up." The *Final Report* of the Royal Commission appointed to inquire into the causes of depression in trade and industry (1886) well expressed the attitude: "We have also shown that some elements in the situation above described are independent of our own control. Namely, the depression in agriculture, which is not likely to exhibit any material improvement until the competition of soils superior to our own has worked itself out. . . ."⁸⁵ This static and acquiescent position is typical of the British farmers in the eighties.

(To be concluded in a later number)

⁸² The acreage rose from 2,161,126 acres in 1886 to 2,197,580 in 1887 and continued to increase until 1891. See *Agricultural Statistics*.

⁸³ Mr. R. H. Pringle's Report on Essex, in "Report of the Royal Commission on the Agricultural Depression," in *Parliamentary Papers*, XVI (1) 1894, p. 132.

⁸⁴ See the evidence of the commissioner, Sir Nigel F. Kinscote in *ibid.*, part 1, p. 1-10.

⁸⁵ *Fourth and Final Report of the Royal Commission Appointed to Inquire into the Depression of Trade and Industry* (London, 1886), xxiii.

NEWS NOTES AND COMMENTS

PERSONAL

Dr. W. J. Spillman, principal agricultural economist, division of farm management and costs, Bureau of Agricultural Economics, died suddenly on July 11, 1931, following an operation at Garfield Hospital, Washington, D. C. Valuable estimates of his contributions as an agricultural leader are given under the title "W. J. Spillman Dies" in the United States Department of Agriculture, *Official Record*, 10: 218 (July 25, 1931), and "Babcock and Spillman Deceased" in the *Experiment Station Record*, 65: 601-607 (November, 1931). Dr. Spillman had been a member of the Agricultural History Society since 1922.

Dr. Henry Barrett Learned, of Washington, died suddenly at Stanford University on October 11, 1931, at the age of 63. He was a charter member of the Agricultural History Society.

Major William M. King, a charter member of the Agricultural History Society, died January 11, 1932, at the age of 99, at his home in Ballston, Arlington County, Virginia. He was a member of the United States Department of Agriculture for 35 years.

Dr. Frederick Jackson Turner, outstanding among American historians, died of a heart attack at his home in California on March 14, 1932. He was connected with the University of Wisconsin in various teaching capacities from 1885 to 1910, and was professor of American history at Harvard from the latter date to 1924 when he became professor of history emeritus. He had been a research associate of the Henry E. Huntington Library since 1927.

BOOKS

Ellen Churchill Semple's *The Geography of the Mediterranean Region; Its Relation to Ancient History* (New York, Henry Holt & Co., 1931. 737 p., illus., maps) is a comprehensive and mature analysis of the most significant geographical region in all the continents and the product of some twenty years of intensive research and scholarly study and numerous journeys to the Mediterranean basin for field work. Readers of *Agricultural History* will be particularly interested in Part 3 on Vegetation and Agriculture. The volume is reviewed by Professor W. Elmer Ekblaw in *Economic Geography*, 8: 104-105 (January, 1932), and by Everett E. Edwards in *Agricultural Economics Literature*, 6: 130 (March, 1932).

Halsted L. Ritter's *Washington as a Business Man* (New York, Sears Publishing Co., 1931. 308 p., illus.) contains chapters on life at Mount Vernon, Washington as a farmer, his interest in land development, his activities in promoting the draining of the Dismal Swamp and the construction of the Chesapeake and Ohio Canal. The volume is reviewed by O. M. Dickerson in the *Mississippi Valley Historical Review*, 18: 567 (March, 1932).

Asher Hobson's *The International Institute of Agriculture; A Historical and Critical Analysis of its Organization, Activities, and Policies of Administration* (Berkeley, Calif., Univ. Calif. Press, 1931. 356 p.) has been issued as volume two of the University of California Publications in International Relations. The following are the titles of its parts: 1, Founding of the Institute: Pioneer Personalities and Early Developments; 2, Organization and Program; 3, Administrative Procedure and Methods of Control; 4, The Institute in its External Relations; 5, Some Conclusions and a Few Recommendations; 6, Appendices.

Les Caractères Originaux de l'Histoire Rurale Française, by Marc Léopold Benjamin (Oslo, H. Aschehoug & Co.; Cambridge, Mass., Harvard Univ. Press, 1931. 261 p.) affords information on the early land tenure, peasantry, and feudalism in France.

A summary of J. Orin Oliphant's doctoral dissertation on "The Range Cattle Industry in the Oregon Country to 1890" appears in *Summaries of Theses Accepted in Partial Fulfilment of the Requirements for the Degree of Doctor of Philosophy, 1930* (Cambridge, Harvard University, 1931), 93-95.

ARTICLES

Among the recent articles of interest to readers of **AGRICULTURAL HISTORY** are the following: "Agricultural Vermont," by S. Axel Anderson and Florence M. Woodward, and "Buffalo as a Flour Milling Center," by Laura O'Day in *Economic Geography* for January, 1932; "Wholesale Commodity Prices at Charleston, South Carolina, 1732-1791," by George Rogers Taylor, in the *Journal of Economic and Business History* for February, 1932; "Land of Cotton," by Peter Molyneaux, in the *Southwestern Review*, summer, 1931; "Introduction of Imported Cattle in Kentucky," in the *Register of the Kentucky State Historical Society* for October, 1931; "Public Opinion and the Inflation Movement in Missouri, 1875-1879," by J. A. Leach, in the *Missouri Historical Review* for April, July, and October, 1930; "The Types of Farming in Michigan," by E. B. Hill, F. T. Riddell, and F. F. Elliott, and issued in 1930 by the Michigan Agricultural Experiment Station as its *Special Bulletin 206*; "Gouvernement en Irrigatie in de Vereenigde Staten," an examination of thirty years of irrigation in the United States, in *Tijdschrift voor Economische Geographie* for June 15, 1931; "Edwards Plateau, A Combination Ranching Region," by William T. Chambers, and "Land Utilization in the Lower Rio Grande Valley of Texas," by Edwin J. Foscue, in *Economic Geography* for January, 1932; "Still Standing, A Landmark in Panhandle History Is the T-Anchor Ranch House," by Violet Short, in the *Progressive Farmer* (Texas ed.) for January 1, 1932; "Types-of-Farming Areas in Texas," by C. A. Bonnen and F. F. Elliott, and issued in May, 1931, as Texas Agricultural Experiment Station *Bulletin 427*; "Forty Years' Evolution in Range Cattle," by A. E. de Ricques, in the *Breeder's Gazette* for March, 1932; "Notes on Historical Literature of the Range Cattle Industry," by James C. Malin, in the *Kansas Historical Quarterly* for November, 1931.